NOTES.

AT a meeting lately held at Stonyhurst College, as we have already recorded, it was decided that a memorial of the late Father Perry should be established. It is proposed either that a new telescope with a 15-inch object-glass shall be erected at Stonyhurst, or that the present equatorial stand shall be furnished with a 15-inch objective. Whichever be adopted, the telescope and the house in which it stands will be called the "Father Perry Memorial," and the work done with the instrument will be published under this name. For the complete telescope and house, £2700 would be required; for the objective alone the sum needed would be £700. It is hoped that funds large enough for the more magnificent monument may be obtained. A more appropriate memorial could not have been suggested, and we have no doubt that many friends and admirers of the late Father Perry will be glad to take this opportunity of expressing their appreciation of his character and work. Subscriptions should be sent either to the "Father Perry Memorial" account, at the London Joint Stock Bank, Limited, Pall Mall Branch, London, S.W., or to Arthur Chilton Thomas, Hon. Secretary and Treasurer, *pro tem.*, Marldon Chambers, 30 North John Street, Liverpool.

THE remains of Captain John Ericsson are now being conveyed across the Atlantic to their last resting-place in Sweden. The transfer of the body, on Saturday, from New York to the war-ship *Baltimore*, was made the occasion of a striking ceremony in honour of the memory of the great inventor. The coffin, wrapped in the flag which floated from Ericsson's famous naval ram, the *Monitor*, in the struggle with the *Merrimac*, was escorted down Broadway by a procession; and among the mourners were the Secretary of the Navy, Admiral Wordon, who commanded the *Monitor* in the engagement with the *Merrimac;* Admiral Braine, commanding the Navy; General Howard, commanding the Army; the Mayors of New York and Brooklyn; and the members of the Swedish Legation. The New York correspondent of the *Daily News* says that dense crowds witnessed the procession, standing with bare heads as it passed. Flags, Swedish and American, were displayed in great profusion throughout the city and harbour. Great bands of streamers festooned fronts of the buildings along the city's main thoroughfare, and from the windows hung colours in endless profusion and variety. The harbour never presented a more charming picture. All the shipping along the water front were dressed for the day with the flags of all nations, at half mast. The body was placed upon a tug at the Battery, and was taken down a long line of shipping to the *Baltimore*, which lay waiting to receive it. The day was rarely beautiful, and the great harbour swarmed with craft of all descriptions. Below the *Baltimore*, stretching in a long line down the bay, were ranged other war-ships. Minute guns were fired till the body reached the ship, when the brief ceremonies of receiving the body were completed. The *Baltimore* then ran up the Royal naval ensign of Sweden, and steamed slowly down the line of battle-ships towards the sea, each vessel raising the same ensign as she passed and firing a salute of 21 guns. The forts at the Narrows also saluted as she passed.

THE meeting of the Iron and Steel Institute in America promises to be very successful. About 300 members and many of their friends will leave England for New York next month. The week beginning on September 29 will be devoted to the reading of papers and discussions by members of the American Institute of Mining Engineers and the English Iron and Steel Institute; and, again, on October 9 and the two following days, these two bodies will co-operate at an international meeting at Pittsburg. Afterwards, excursions will take place to the iron ore and copper regions of Lake Superior and to the new iron-making district of Alabama. The American Reception Committee will provide sleeping and luncheon cars to take their visitors over 3000 miles of the United States.

THE eighth meeting of the International Congress of Americanists will be held in Paris from October 14 to 18. Questions relating to history and geography, archæology, anthropology and ethnography, and linguistics and palæography, have been drawn up by the organizing committee for the consideration of the Congress. Communications regarding the forthcoming meeting should be addressed to M. Désiré Pector, General Secretary of the Organizing Committee, 184 Boulevard Saint-Germain, Paris.

THE American Forestry Association is to meet at Quebec on September 2, and will sit four days. By invitation of the Government of the Province of Quebec, the meetings will be held in the Parliament buildings.

THIS week the Sanitary Institute has been holding its twelfth Annual Congress at Brighton. The business of the Congress was opened on Monday evening, when Sir Thomas Crawford delivered his presidential address in the music-room of the Royal Pavilion, before a large assembly. After a tribute to the late Sir Edwin Chadwick, the president dealt with "some fragments of the story of laws violated to the prejudice of health." On Tuesday an interesting address on "The Living Earth" was delivered by Dr. G. Vivian Poore, President of the Section for Sanitary Science and Preventive Medicine. Mr. W. H. Preece lectured on Tuesday evening on the sanitary aspects of electric lighting.

THE new number of the Journal of the Royal Horticultural Society contains a full and interesting report of the Daffodil Conference held at Chiswick in April last. The Conference lasted two days, and on the first day the chair was taken by Prof. Michael Foster, who, in the course of his opening address, offered some remarks on the naming of different forms of the daffodil. He urged that new names should be given only to forms which can be readily recognized as distinct by ordinary people, and are more beautiful than, or differ in beauty from, their forerunners. A new name should also, he thought, be, if possible, one that can be easily written, and easily read, and that "can be spoken, if not easily, at least without great effort." Mr. J. G. Baker, who presided on the second day, said that twenty years ago very few people took any interest in daffodils, but now the daffodil shared with the primrose the honour of being the most popular flower of the spring-time. "The genus," he added, "is of great interest from a botanical point of view. We are obliged as botanists to deal with all plants on one uniform plan as regards arrangement and nomenclature. From that point of view we look upon *Narcissus pseudo-narcissus* as a single aggregate species, and, comprised within this, there are in gardens about 200 forms. In the whole genus we have only about twelve or sixteen distinct species in this sense. The greatest change at the present time is the raising of forms from species or varieties not known to hybridize before, and it is wonderful that all the Narcissi cross so freely, many of them—as, for instance, *N. pseudo-narcissus* and *N. poeticus*—being so distinct from each other in form."

THE Australasian Association for the Advancement of Science has published a volume containing a report of its first meeting, held at Sydney, New South Wales, in August and September 1888. The editors are Prof. A. Liversidge, F.R.S., and Prof. R. Etheridge, Jun. The volume includes many valuable addresses and papers, and is well illustrated.

THE death is announced of Dr. Felix Liebrecht, an early and highly successful student of folk-lore and comparative mythology.

He was born at Silesia, in 1812, and after studying at Breslau, Munich, and Berlin, became a professor at Liége, where he remained during the greater part of his working life. He translated the "Pentamerone" of Basile from the Italian in 1846, and in the following year issued a version of the romance of Barlaam and Josaphat from the Greek of Johannes Damascenus. In 1851 he translated Dunlop's "History of Fiction." A curious treatise by Gervase of Tilbury attracted his notice as being a sort of encyclopædia of mediæval folk-lore, and he brought out an edition of it in 1856 enriched with many valuable notes. A selection of his contributions to periodical literature on his special subject appeared in 1879, entitled "Zur Volkskunde."

PROF. FLOWER and Mr. Lydekker are engaged in preparing for publication a work entitled "An Introduction to the Study of Mammals, Recent and Extinct." It is based mainly upon the articles contributed by the first-named author and Mr. G. E. Dobson to the ninth edition of the "Encyclopædia Britannica," but much new matter will be added, and the whole brought up to date. The publishers are Messrs. Black, of Edinburgh, and the work is expected to appear before the end of the year.

MESSRS. D. C. HEATH AND CO., Boston, announce the publication of a new number in the series of "Guides for Science Teaching," issued under the auspices of the Bostonian Society of Natural History. The book is entitled "Insecta," and is written by Prof. Hyatt, Curator of the Natural History Society. It is extensively illustrated.

MR. J. B. MARCOU'S "Bibliography of North American Palæontology in the year 1886" has been reprinted from the Smithsonian Report for 1886-87.

THE City and Guilds of London Institute has issued its programme of technological examinations for the session 1890-91. In a special paper attention is called to various alterations and additions.

THE University Correspondence College has published, in its Tutorial Series, a Directory containing all necessary information as to London Intermediate Science and Preliminary Scientific Examinations.

DURING the cruise of the U.S.S. *Thetis* in the Behring Sea and Arctic Ocean, in 1889, several officers were directed to prepare reports on subjects connected with the waters and regions visited by the vessel. One of the reports drawn up in accordance with instructions related to the Eskimos of north-western Alaska, and was written by Mr. John W. Kelly, who had spent three winters among the north-western Eskimos. This report has now been published by the United States Bureau of Education, and all students of ethnography will find in it much that cannot fail to interest them. It is accompanied by English-Eskimo and Eskimo-English vocabularies, prepared by Ensign Roger Wells, chiefly from information furnished by Mr. John W. Kelly. These vocabularies are primarily intended for teachers in Alaska, but it is expected by the Bureau of Education that they will also be of service to officers of the navy and of the revenue marine service, to all Goverment officials in Alaska, to committees of Congress visiting the country, and to many others who for any reason may desire to study the Eskimo language.

THE U.S. Bureau of Education has issued a Bulletin, by Prof. C. F. Smith, of the Vanderbilt University, on "Honorary Degrees as Conferred in American Colleges." The author protests vigorously against the lavish way in which various American institutions raise incompetent persons to the rank of "doctor."

WE have received from the Santiago Observatory (Chile) two volumes comprising the meteorological observations for the years 1882-87. This Observatory, which is furnished with the best instruments, has published observations in the present form since 1873, although they had been taken and partially published for many years previously. The observations for three hours daily are given in a tabular form, and the means for each day are laid down in curves. Full particulars as to the instruments and methods of observation are given in an earlier volume, and the series presents most valuable materials for the study of the climate in those distant parts.

THE Italian Meteorological Office has published its "Annals" for 1886, consisting of four folio volumes. The first volume contains the Report of the Director of this extensive organization, and shows that there were in that year 123 observatories and stations at which complete observations were made, and 630 stations recording temperature and rainfall. This part also contains some valuable memoirs, among which may be mentioned: the climate of Massowah, by P. Tacchini; the comparison of anemometers, and evaporation, by Dr. Ragona; the temperature of snow at different depths, and of the air above it, by Dr. Chistoni, &c. Vols. ii. and iii. contain the ten-day, monthly, and annual means for the various stations, and the results of evaporation and cloud observations. Vol. iv. deals more especially with earthquake phenomena, and contains investigations on several shocks which have occurred in Italy, together with memoirs on the various seismographs used in different countries.

THE Archæological Survey of India perseveres with its unostentatious task of reclaiming from ruin and oblivion the countless inscriptions which lie scattered about India, offering a clue to many questions of ancient history and philology. These despised or neglected records are found in all sorts of likely and unlikely places. The *Englishman* of Calcutta refers to one which has lately been recovered from obscurity, and which is just a thousand years old. It was found incised on a stone slab partly fixed in the wall of a house and used as a seat, in the bazaar of Pahoa or Pihewa, in the Umballa district. Considerable difficulty was experienced in inducing the owner of the house to allow the stone to be removed, but the treasure was eventually acquired, and now lies in the Lahore Museum. The inscription consists of twenty-one stanzas of Sanskrit verse, and is an account of the building and endowment of a temple of Vishnu, together with a eulogy of the family who performed the meritorious deed. Regarding one of the brothers we are told that "when suppliants with rapture looked on his lotus face their mental anxiety completely vanished in an instant; and the crowd of hostile trumpeting elephants always shook before him in battle ready to disperse." This may be taken as a characteristic Oriental rendering of the sentiment of the familiar Scotch song, "His step is first in peaceful hall, His sword in battle keen." For extravagance of laudation, however, a higher place must be given to an inscription found near Jubbulpore, in which it is said of a certain king, that although the tread of his armies roused the apprehension of the three worlds—heaven, earth, and hell—yet there was no dust raised, as the road was flooded by the tears of the captive women who followed in his train.

THE *Photographic News* concludes an interesting article on the photographing of clouds with the following suggestions, which are offered for the benefit of those who have not had much experience in making cloud negatives:—If the sun is to be included in the picture, films or ground-glass backed plates should be used. Any lens which will take a good landscape can be used, and its smallest stop should be employed. As a rule, the exposure will be about one second on a slow plate, but in the case of red sunrises and sunsets, this may often be increased to as much as eight or even ten seconds unless isochromatic plates are available. The development must be very carefully watched, and not carried too far.

COUNTLESS swarms of rats periodically make their appearance in the bush country of the South Island, New Zealand. They invariably come in the spring, and apparently periods of about four years intervene between their visits. In a paper published in the new volume of the Transactions and Proceedings of the New Zealand Institute, Mr. Joseph Rutland brings together some interesting notes on the bush rat (*Mus maorium*). In size and general appearance it differs much from the common brown rat. The average weight of full-grown specimens is about 2 ounces. The fur on the upper portions of the body is dark brown, inclining to black; on the lower portions white or greyish-white. The head is shorter, the snout less sharp, and the countenance less fierce than in the brown species. On the open ground bush rats move comparatively slowly, evidently finding much difficulty in surmounting clods and other impediments; hence they are easily taken and destroyed. In running they do not arch the back as much as the brown rat. This awkwardness on the ground is at once exchanged for extreme activity when they climb trees. These they ascend with the nimbleness of flies, running out to the very extremities of the branches with amazing quickness; hence, when pursued, they invariably make for trees if any are within reach. The instinct which impels them to seek safety by leaving the ground is evidently strong. A rat, on being disturbed by a plough, ran for a while before the moving implement, and then up the horse-reins, which were dragging along the ground. Another peculiarity of these animals is that when suddenly startled or pursued they cry out with fear, thus betraying their whereabouts, an indiscretion of which the common rat is never guilty.

IN a paper recently read before the Vienna Academy, Herren Elster and Geitel give the results of a year and a half's observations of atmospheric electricity on the north side of Wolfenbüttel (bordering an extensive meadow). They used a stand carrying a petroleum flame and connected by insulated wire with an electroscope. A marked difference was found in the phenomena of spring, summer, and autumn, on the one hand, and winter on the other. In the former the daily variation of the fall of potential showed a distinct maximum between 8 and 9 a.m., as Exner found at St. Gilgen, and a distinct minimum between 5 and 6 p.m., whereas Exner found a maximum about 6. In winter there is great irregularity; but a weak minimum occurs about 11 a.m., and a more decided maximum about 7 p.m. It appears to the authors that other factors than humidity, with which Exner seeks to explain the variations, are concerned in the case. When the temperature goes below zero, cold mist being then generally present, there is often rather a sharp rise in the values, the aqueous vapour having then less action. Rainfall in a neighbouring region lowers the fall of potential both in winter and summer, and a disturbance of the normal course will announce a coming change in places still unclouded. Snow, it seems, rather raises the values. It has been shown by Linss that the course of the fall of potential is inversely as the coefficient of dispersion of the air for electricity; which, again, depends not only on the dust and aqueous vapour present, but also, according to Arrhenius's theory, on a sort of electrolytic or dissociative action of the sun's rays on the atmosphere (thus it has been shown that electricity escapes from a conductor under the influence of ultra-violet rays). The authors find their results support this latter view. They consider that the electric processes during formation of precipitates are the chief cause of the disturbance of the normal condition.

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus*) from India, presented by Miss White; a Common Fox (*Canis vulpes*), British Isles, presented by Mr. H. Fane Gladwin; a —— Fox (*Canis* ——) from Buenos Ayres, presented by Mr. J. R. Bell; a Common Otter (*Lutra vulgaris*), British Isles, presented by Mr. W. Corbet; a Punjab Wild Sheep (*Ovis cycloceros*) from India, presented by Dr. W. King; two European Scops Owls (*Scops gui*) from Austria, presented by Mr. Edward R. Divett; six Prussian Carp (*Carassius vulgaris*), British fresh waters, presented by Mr. G. S. Godden; three Pochards (*Fuligula ferina*), Europe, purchased; a Yak (*Poëphagus grunniens*), a Yellow-footed Rock Kangaroo (*Petrogale xanthopus*), and three Cambayan Turtle-doves (*Turtur senegalensis*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

OBJECTS FOR THE SPECTROSCOPE.

Sidereal Time at Greenwich at 10 p.m. on August 28 = 20h. 28m. 16s.

Name.	Mag.	Colour.	R.A. 1890.	Decl. 1890.
			h. m. s.	° ′
(1) G.C. 4572	—	—	20 17 28	+19 45
(2) P Cygni	Var.	Yellow.	20 13 44	+37 41
(3) D.M. + 17° 4370 ...	7	Reddish-yellow.	20 33 4	+17 53
(4) ε Delphini	4	Yellowish-white.	20 28 0	+10 56
(5) α Delphini	3·5	White.	20 34 30	+15 31
(6) 228 Schj.	7	Reddish-yellow.	19 28 1	−16 34
(7) X Ophiuchi	Var.	Red.	18 33 7	+ 8 44

Remarks.

(1) This is a fine though small planetary nebula, with four minute stars in close proximity. Lord Rosse described it as "a beautiful little spiral." In 1866 Dr. Huggins observed the spectrum of the nebula, and recorded:—"The spectrum of this nebula consisted of one bright nebulous line of the same refrangibility as the brightest of the lines of nitrogen. No other line was certainly seen." It is evident that this observation has an important bearing on the character of the chief line of the nebula spectrum, and it would be well if some other observer would take the trouble to reobserve it. It should be noted also whether the nebulosity is limited to one side of the line, or is equally visible on both sides.

(2) In 1600, this appeared as a bright star, but it has since been comparatively faint. It is especially interesting from the fact that its spectrum contains bright lines, chief amongst these being the lines of hydrogen and D_3. The Henry Draper Memorial photograph, however, shows in addition a very bright line near λ 447, which Mr. Lockyer suggests, from its association with D_3, is Lorenzoni's *f* of the chromosphere spectrum. It will be remembered that this line occurs also in the spectrum of the Orion nebula. Hence, the lines in the visible part of the spectrum which are common to P Cygni and the Orion nebula are hydrogen (F and G), D_3, and 447 (*f*); another bright line in the violet is also common to the photographs of the two spectra. This similarity is evidently in favour of the view that stars with bright line spectra are similar in constitution to nebulæ, though they are probably more condensed. It will be an interesting inquiry to see if P Cygni has anything more in common with nebulæ in the visible spectrum.

(3) According to the records of the spectrum of this star, it is one of the finest of Group II. Dunér calls it superb, all the bands 2–9 being extremely wide and dark. It affords a good opportunity for further observations of the peculiarities of this class of spectrum.

(4) Gothard states the spectrum of this star as ? II.*a*, whilst Vogel writes it I.*a* (Group IV.). My own observations confirm Vogel's statement, the spectrum being almost like that of α Lyræ.

(5) A star of Group IV.

(6) This is a star of Group VI., showing the secondary bands 2, 3, 4, and 5 (all in the red and yellow) in addition to the bands of carbon. The star is not so red as most of the members of the group, and this is no doubt due to the absorption of red light by the secondary bands. Other details should be looked for.

(7) This Group II. star will reach a maximum about September 5, and the appearance of bright lines, as in other variables of the same type, may be expected. The period is about 300 days, and the magnitude changes from 6·8 to 9.

A. FOWLER.